

REMARKS

Claims 1, 17 and 23 have been amended. Support for amended claims can be found, e.g., on Figs. 7-8 and pages 7-9 of the specification.

In section 4, the Examiner rejects claims 1-3, 7-15 and 17-24 under 35 USC 103(a) as being unpatentable over the acknowledged prior art (APA) in view of Tsukagoshi et al. (US Patent No. 5,804,882). Moreover, in section 5, claim 16 is rejected under 35 USC 103(a) as being unpatentable over APA in view of Tsukagoshi et al., and further in view of Loh et al. (US Patent No. 5,650,919). These rejections are respectfully traversed.

As discussed in the previous response, the spacer elements 6 in Tsukagoshi et al. cannot serve as barriers to separate the conductive particles as disclosed in the present application. For example, Tsukagoshi et al. teaches that the height of the spacer 6 is almost the same as the projecting electrodes 7 (see, e.g., abstract and col. 6, lines 35-37). The spacer 6 cannot work as the barrier structure which must be higher than the bump or electrode. See, for example, Fig. 1G of the present application where the barriers 6 (peak-shape dielectric dams) are able to block the movement of the particles 1.

In paragraph (i) of the Advisory Action, the Examiner asserts that the features upon which the Applicants rely (i.e., the barrier structure which must be higher than the bump or electrode) are not recited in the rejected claims. These are not the features the Applicants rely upon. The Applicants simply points out that since the height of the spacer 6 in Tsukagoshi et al. is too low, it is not capable of serving as a "barrier" to separating the conductive particles. In more clearly distinguish the claimed invention from the cited references, the Applicants have added the limitation

"the barrier rib being higher than the bumps" into the independent claims.

In paragraph (ii) of the Advisory Action, the Examiner asserts that Fig. 2 of Tsukagoshi et al. discloses trapping some electroconductive particles 12 in a closed area without any free movement of particles from one place to another. The Applicants respectfully disagree. In Fig. 2 of Tsukagoshi et al., there appears to be no closed area; and the spacers 6 (not barriers) cannot "separate" the conductive particles. The spacers 6 at most restrict movement of particles to a certain degree. The phrase "separating the conductive particles", as recited by claim 1 of the present application, infers that the conductive particles cannot move from one area to another, due to the existence of the barrier structure. Tsukagoshi's spacers clearly do not have this function.

At col. 5, lines 27-30, Tsukagoshi states that the spacer elements are designed to ensure that the flow of adhesive smooth from the center to the edge portions of the semiconductor chip. In other words, the spacer elements are used for smooth flow of the adhesive, not as barriers to separate conductive particles.

In paragraph (iii) of the Advisory Action, the Examiner asserts that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. The Examiner further states that a reconstruction would be proper if it does not include only knowledge gleaned from the Applicants' disclosure, but knowledge that was within the level of ordinary skill in the art. It is noted that there is no motivation to incorporate the spacer of Tsukagoshi et al. into APA or Loh et al., because it would not help achieving the objective of these references, because (i) the height of the spacer is almost the same as the projecting electrodes, thus cannot preventing conductive particles from moving among different pads; and (ii) Tsukagoshi et al. states that the material of the spacer can be conductive, obviously not designed for preventing conductive particles. If the combination of the references do not help achieving the intended purpose, there is no

motivation to combine.

In paragraph (iv) of the Advisory Action, the Examiner identifies the circuit 5 at the top in Tsukagoshi et al. as the first pads and the circuit 5 at the bottom as the second pads. Indeed, in Tsukagoshi et al., there is not circuit 5 at the top side, only an insulating layer 3. Moreover, even if there are pads on both sides, the spacers in no way separates the conductive particles between one set of pads to another set of pads. The particles 12 can move free from the top side to the bottom side in Tsuagoshi.

Due to the reasons stated above, it is therefore Applicant's belief that claims 1, 17 and 23 are allowable over the cited reference. Insofar as claims 2-3 and 7-16 depend from claim 1 and claims 18-21 depend from claim 17, it is Applicant's belief that these claims are also allowable.

The Applicants believe that the application is now in condition for allowance. If any point requires further explanation, the Examiner is invited to telephone Troy Cai at (323) 934-2300 or e-mail Troy Cai at tcai@ladasparry.com. The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account No. 12-0415.

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June 28, 2004

(Date of Deposit)

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6/28/04

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Respectfully submitted,



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